AMENDMENTS TO THE CLAIMS

Please replace the pending claims with the following claim listing:

1. **(Previously Presented)** A perimeter security system including;

at least a first waveguide and at least a second waveguide buried below ground level and extending along a perimeter which defines an area to be monitored;

means for launching light into the first and second waveguides;

a detector for detecting light which has propagated through the waveguides so as to detect a change in a parameter of the light propagating through the waveguides due to an intrusion across the ground beneath which the waveguides are buried and for providing an indication of that intrusion;

the first and second waveguides being provided in separate cables and the separate cables being buried beneath ground level in a zig-zag spaced apart relationship with respect to one another to define a perimeter region having a substantial width which will be traversed by a person intruding into the area;

a first of the said cables contains said at least one waveguide and a second said cable contains said second waveguide;

a further waveguide being contained within the first cable;

first coupling means at one end of the said first, second and further waveguides for coupling the waveguides so that light launched into the said further waveguide is able to propagate through the further waveguide and then into the said first and said second waveguides to propagate in a first direction through the said first and second waveguides;

second coupling means at the other end of said first and said second waveguides so that the light propagating in the said first direction through said first and second waveguides is able to coherently recombine and interfere at the second coupling means; and

light also being able to be launched through said second coupling means and into said first and second waveguides to travel in a direction opposite said first direction and coherently recombine at the first coupling means so the light travelling in the opposite direction is able to interfere and then propagate through the said further waveguide.

2. **(Original)** The perimeter security system of claim 1 wherein the detector detects the interference pattern and upon an intrusion a parameter of light passing through one of the waveguides is altered with respect to the same parameter of the light passing through the other of the waveguides, to thereby change the interference pattern detected by the detector to provide an indication of the intrusion.

3. **(Original)** The perimeter security system of claim 1 wherein the substantial width is a width such that a person travelling in normal walking or running motion will not step over the width of the region.

4. **(Original)** The perimeter security system of claim 3 wherein the width of the region is between one and two meters.

5. **(Original)** The perimeter security system of claim 1 wherein counter-propagating light signals are launched into each of the waveguides so that the location of an intrusion can be detected by the time difference between detection of the changed interference pattern propagating in one direction and to the changed interference pattern propagating in the opposite direction.

6. **(Original)** The perimeter security system of claim 1 wherein the detector is coupled to the further waveguide and to the second coupling means for detecting the counter propagating light signals after interference of those signals so that any disturbance of the first waveguide and/or said second waveguide will change a parameter of the light propagating through the first and/or second waveguides to thereby change the interference patterns detected by the detector to cause the detector to provide an indication of the intrusion.

7. **(Original)** The perimeter security system of claim 6 wherein the location of the intrusion can be determined by the time difference between receipt of the modified counter-propagating signal travelling in the first direction compared to the receipt of the modified propagating signal travelling in the opposite direction.

8. **(Original)** The perimeter security system of claim 6 wherein the detector comprises a first detector and a second detector, the first detector and second detector being synchronised and the first detector detecting the counter-propagating signal travelling in the first direction and the second detector detecting the counter-propagating signal travelling in the opposite direction.

9. **(Original)** The perimeter security system of claim 1 wherein the means for launching light into the waveguides comprises a light source coupled to a third coupling means having first and second output arms, the first output arm being coupled to an input arm of a fourth coupling means and the other output arm being coupled to an arm of a fifth coupling means, an arm of the fourth coupling means being coupled to the further waveguide for launching light into the further waveguide, and an arm of the fifth coupling means being coupled to an arm of the second coupling means for launching light into the second coupling means.

10. **(Original)** The perimeter security system of claim 8 wherein the first detector is coupled to an output arm of the fourth coupling means and the second detector is connected to an output arm of the fifth coupling means.

11. **(Original)** A perimeter security system for underground use including:

at least a first waveguide and at least a second waveguide for extending along a perimeter which defines an area to be monitored;

means for launching light into the first and second waveguides;

a detector for detecting light which has propagated through the waveguides so as to detect a change in parameter of the light propagating through the waveguides due to an intrusion across the ground when the waveguides are buried, and for providing an indication of that intrusion;

the first and second waveguides being provided in separate cables, and the separate cables being for location beneath ground level in a zig-zag spaced apart relationship with respect to one another to define a perimeter region having a substantial width which will be traversed by a person intruding into the area;

a first of said cables containing said at least one waveguide and a second said cable containing said second waveguide;

a further waveguide being contained within the first cable;

first coupling means at one end of said first, second and further waveguides for coupling the waveguides so that light launched into said further waveguide is able to propagate through the further waveguide, and then into the said first and said second waveguides to propagate in a first direction through the first and second waveguides;

second coupling means at the other end of said first and said second waveguides so that the light propagating in said first direction through said first and second waveguides is able to coherently recombine and interfere at the second coupling means; and

light also being able to be launched through said second coupling means and into said first and second waveguides to travel in a direction opposite said first direction, and coherently recombine at the first coupling means so that the light travelling in the opposite direction is able to interfere and then propagate through said further waveguide.

12. **(Currently Amended)** A below ground perimeter security system comprising:

at least one first waveguide;

at least one second waveguide;

means for launching light into the first and second waveguides, so that the light is able to propagate along the first and second waveguides;

means for receiving the light from the first and second waveguides so that the light can interfere; and

a detector for detecting the interfering light from the first and second waveguides to detect a change in a parameter of the light propagating through the first and second waveguides due to the traversing of a barrier region to provide an indication of an intrusion across the barrier region;

the at least one first waveguide being contained in a first cable and the at least one second waveguide being contained in a second cable;

the first and second waveguides being sensitive waveguides and forming a sensor for detecting a breach of the barrier region; and

the first and second cables being arranged below ground level and in a zig-zag spaced apart relationship relative to one another to define the barrier region which, should the region be traversed at ground level, will result in detection of the traversing of that barrier region.

13. **(Original)** The system of claim 12, wherein the first and second waveguides are coupled together by a coupler so that the light circulates through the waveguides in counter propagating manner to enable not only the detection of intrusion, but also the location of the intrusion.

14. **(Cancelled)**

15. **(Previously Presented)** The system of claim 12, wherein the light propagates through the first and second waveguides in a counter propagating manner.

16. **(New)** The system of claim 12 wherein at least two optical fibers are disposed within each of the first and second cables.

17. **(New)** The system of claim 12 wherein the first and second cables comprise commercial grade 2 core or 4 core tight buffered optical fiber communication cables.

18. **(New)** The system of claim 12 wherein the first and second cables are about 6 mm. in diameter.

19. **(New)** The system of claim 12 wherein the zig-zag pattern of the first cable is opposite to that of the second cable.

20. **(New)** The system of claim 12 wherein the barrier region has a width of between 1 and 2 meters.